

ABSTRACT OF THE DISCLOSURE

An OLED display system includes an OLED display including an array of light emitting pixels, each pixel having a plurality of OLEDs for emitting different colors of light specifying a gamut and including at least one additional 5 OLED within the gamut defined by the other OLEDs and wherein one of the OLEDs has a power efficiency or lifetime different from the power efficiency or lifetime of at least one of the other OLEDs; a control signal; and a display driver for receiving a color display signal representing a relative luminance and color to be produced for each pixel of the display and generating a converted color display 10 signal for driving the OLEDs in the display at the relative luminance and color, wherein the display driver is responsive to the control signal for controlling the in-gamut mixing ratio of the OLEDs to reduce power consumption or increase lifetime of at least one of the OLEDs.